

arylsulfonyl, aminosulfonyl, alkylaminosulfonyl, dialkylaminosulfonyl, arylaminosulfonyl or diarylamino sulfonyl.

6. (Previously presented) The LPC of claim 5, wherein: X^1 is OH, SH, NH_2 , COR^5 or $COOR^4$, where R^4 is selected from hydrogen, alkyl, aryl, aralkyl, heteroaryl, heteroaralkyl, heterocyclyl and heterocyclylalkyl; and R^5 is halide, heteroaryl or pseudohalide.

7. (Previously presented) The LPC of claim 5, wherein Z is a group with three or more points of attachment: one to A, and the others to two or more X^1 groups.

11. (Previously presented) The LPC of claim 5, wherein p is 0 and n is 4.

12. (Previously presented)) The LPC of claim 5, wherein Z is any combination of 1-12 units selected from 1,4-phenylene and methylene, which units may be combined in any order, with the proviso that if Z is methylene, then Z contains more than three methylene units.

13. (Previously presented) The LPC of claim 5, wherein Z is C_{1-12} alkylene, with the proviso that if Z is methylene, then Z contains more than three methylene units.

14. (Previously presented) The LPC of claim 5, wherein X^1 is OH, SH or NH_2 .

15. (Previously presented) The LPC of claim 14, wherein X^1 is OH.

16. (Previously presented) The LPC of claim 14, wherein X^1 is NH_2 .

17-28. Cancelled.

29. (Previously presented) The LPC of claim 5 that is coupled to a photocleavable linker.

30-32. Cancelled.

33. (Currently amended) A method of solution phase biopolymer synthesis, comprising the steps of:

(a) reacting an LPC of formula $(R^1)_p-A-(Z_t-X^1)_n$ with a first monomer N^1 ;

(b) separating and purifying the product of step (a) to afford a compound of formula $(R^1)_p-A-(Z_t-X^1-N^1)_n$;

(c) reacting the product of step (b) with a second monomer N^2 , a dimer N^2-N^3 or a trimer $N^2-N^3-N^4$; and

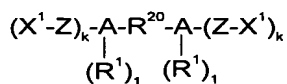
(d) repeating steps (b) and (c) to produce an LPC-bound biopolymer of formula $(R^1)_p-A-(Z_t-X^1-N^1-N^2-...-N^m)_n$, where m is 3 to 100, wherein:

A is silicon; R^1 is hydrogen, alkyl, aryl, aralkyl, heteroaryl, heteroaralkyl, heterocyclyl or heterocyclylalkyl; p is 0 or 1;

Z is any combination of 0-12 units selected from 1,2-, 1,3- or 1,4-phenylene and alkylene, which units may be combined in any order; t is 0 or 1; X^1 is any reactive group that

40-44. Cancelled.

45. (Currently amended) A liquid phase carrier (LPC) that has formula:



wherein:

A is silicon; R¹ is hydrogen, alkyl, aryl, aralkyl, heteroaryl, heteroaralkyl, heterocyclyl or heterocyclylalkyl;

Z is any combination of 1-12 units selected from 1,2-, 1,3- or 1,4-phenylene and alkylene, which units may be combined in any order; t is 0 or 1;

X¹ is any reactive group that effects biosynthesis of biopolymers from monomers to produce biopolymers are selected from among polypeptides, oligonucleotides, peptide nucleic acids and oligosaccharides;

R¹, X¹, and Z are unsubstituted or substituted with one or more substituents each independently selected from Q; ~~and~~

Q is halogen, hydroxy, nitrile, nitro, formyl, mercapto, carboxy, alkyl, haloalkyl, polyhaloalkyl, aminoalkyl, diaminoalkyl, alkenyl containing 1 to 2 double bonds, alkynyl containing 1 to 2 triple bonds, cycloalkyl, cycloalkylalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl, alkylidene, arylalkylidene, alkylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxy-carbonyl, alkoxy-carbonylalkyl, aryloxy-carbonyl, aryloxy-carbonylalkyl, aminocarbonyl, alkylaminocarbonyl, dialkylaminocarbonyl, arylaminocarbonyl, diarylaminocarbonyl, arylalkylaminocarbonyl, alkoxy, aryloxy, perfluoroalkoxy, alkenyloxy, alkynyloxy, arylalkoxy, amino, aminoalkyl, alkylaminoalkyl, dialkylaminoalkyl, arylaminoalkyl, diarylaminoalkyl, alkylamino, dialkylamino, arylamino, diarylamino, alkylaryl-amino, alkylcarbonylamino, alkoxy-carbonylamino, arylcarbonylamino, aryloxy-carbonylamino, azido, alkylthio, arylthio, perfluoroalkylthio, thiocyno, isothiocyano, alkylsulfinyl, alkylsulfonyl, arylsulfinyl, arylsulfonyl, aminosulfonyl, alkylaminosulfonyl, dialkylaminosulfonyl, arylaminosulfonyl or diarylaminosulfonyl;

R²⁰ is alkylene, alkenylene, alkynylene, arylene or heteroarylene;

k is 2 or 3; and

j is 0 or 1.

49. (Previously presented) The LPC of claim 5 coupled to a biopolymer.